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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554
MAY 18 1992

In the Matter of)
)
Open Network Architecture Tariffs)
of the Bell Operating Companies)

Federal Communications Commission
Office of the Secretary

CC Docket No. 92-91

BELL ATLANTIC'S¹ DIRECT CASE

The Commission has asked Bell Atlantic to address four questions in its investigation of the Open Network Architecture ("ONA") tariffs.² Those questions, and Bell Atlantic's response to each, are set out below.

1. Have carriers selected model offices that are representative of offices that will be used to provide BSEs?

Bell Atlantic has developed model offices that are representative of those it uses to provide BSEs.

The Switching Cost Information System ("SCIS") is designed to calculate the forward-looking investment associated with the components of network switches that will be used to provide individual network features, including ONA Basic Service Elements ("BSEs"). To develop forward-looking costs, SCIS must base its cost calculations on the characteristics of "model

¹ The Bell Atlantic telephone companies ("Bell Atlantic") are The Bell Telephone Company of Pennsylvania, the four Chesapeake and Potomac telephone companies, The Diamond State Telephone Company and New Jersey Bell Telephone Company.

² Order Designating Issues for Investigation, DA 92-483 (rel. April 16, 1992) ("Order").

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offices" that are representative of planned switch deployments.³ Therefore, each SCIS model office is based on an analysis of Bell Atlantic's switch replacement schedule and the planned use of each switch type.⁴

For the switch replacement schedule used for SCIS, Bell Atlantic assumed -- conservatively -- that the useful life of a switch will be the longest scheduled life for the appropriate switch investment account.⁵ Bell Atlantic also assumed that switch exhaustion would not occur before the planned replacement date. SCIS, therefore, assumes that switches will never have to be replaced before the end of their useful life, and that there will be no need for additional investment in replacement switches.

In developing the SCIS model office for larger jurisdictions, Bell Atlantic used a statistical sample of the offices in that jurisdiction.⁶ That sample included over 60% of the Bell Atlantic end office switches that are capable of

³ Bell Atlantic developed a separate model office for 1AESS, 5ESS and DMS-100 switch types in each jurisdiction.

⁴ Because SCIS is a forward-looking costing tool, it does not model the embedded network and, therefore, will not close to the company's books of embedded network investment (Part 32).

⁵ That life is 16 years for the analog switching account and 20 years for the digital switching account.

⁶ Remote switches are associated with the host switches on which they home and were not separately sampled.

providing the BSEs.⁷ Bell Atlantic used a standard statistical sampling technique to ensure that the model offices accurately reflect the characteristics of the switch population that provides a particular BSE. The technique is called Sampling with Probability Proportionate to Size ("PPS").⁸ PPS assumes that a switch that serves a higher number of access lines will have more BSE usage than will a smaller switch. Therefore, PPS assigns a higher probability that the larger switches will be selected. The combination of the large sample size and the use of PPS ensures that Bell Atlantic's SCIS model offices are statistically valid representatives.

2. Is use of a cost of money that exceeds 11.25 percent reasonable?

Bell Atlantic used forward-looking estimates for the cost of money -- that is, estimates of the return on investment that investors will require in future years. Increased competition, fostered both by Commission policies and by the marketplace, will significantly increase the risk Bell Atlantic faces. Investors, therefore, will demand a return commensurate with this higher risk.

⁷ Inclusion of all switches would have provided no more accurate information than the sample Bell Atlantic used.

⁸ See, e.g., William G. Cochran, *Sampling Techniques*, 250-258 ("Single Stage Cluster Sampling") (3d ed. 1977).

This return on investment does not relate directly to the Commission's prescribed rate of return. The latter is an average industry figure, representing the Commission's assessment of the costs of embedded debt and equity in 1989.⁹ It is not appropriate for a forward-looking cost model like SCIS.

Even if Bell Atlantic used a somewhat lower return on investment, the impact on BSE rates would be trivial.¹⁰ The SCIS model uses the cost of money to calculate the present value of demand and of investment over the economic life of the switch. A change in this factor has an insignificant effect on the SCIS unit investment output.¹¹

This can be demonstrated by testing SCIS with 11.25% as the cost of money. This results in a change in unit investment of less than 1% for analog switches and 1.5% for digital switches. Bell Atlantic also recalculated each of its BSE capital costs using an 11.25% cost of money. The result was a reduction of no more than 6% in the direct costs of any BSE, as shown for representative BSEs in the following table. These

⁹ See *Represcribing the Authorized Rate of Return for Interstate Services of Local Exchange Carriers*, 5 FCC Rcd 7507, at App. C (1990).

¹⁰ The Commission indicated that this investigation is concerned with a "wide disparity in rate levels," not with *de minimis* variations. Order at ¶ 1.

¹¹ For many of these calculations, the cost of money appears in both the numerator and denominator of the equation and, therefore, virtually cancel.

changes are *de minimis*, not the "wide disparit[ies]" the Commission sought to correct in this investigation.

ANNUAL DIRECT COSTS			
<u>BSE</u>	<u>As Filed</u> ¹²	<u>11.25% Ret.</u>	<u>%Change</u>
Automatic Number Identification	\$.000287	\$.000272	5.23%
Answer Supervision	16.44	15.60	5.11%
Hunting Service Arrangements	1.08	1.02	5.56%
Messaging Services Interface	5,169.60	4,882.44	5.55%
Three-Way Calling	63.36	59.76	5.68%

3. Should 1ESS and/or 1AESS switch costs be included in the development of BSE rates?

Bell Atlantic uses both analog and digital switches to provide most BSEs.¹³ As a result, the costs of both should be included when the rates of those BSEs are developed. Bell Atlantic bases its forward-looking switch mix on expenditures from its planned construction budget, not the mix of embedded switches in the network.¹⁴ The additional analog investment included in the budget is investment which will be needed to meet

¹² Bell Atlantic Transmittal No. 471, Chart UNIT, line 7.

¹³ The only analog switch type Bell Atlantic uses for BSEs is the 1AESS, and, therefore, it included no 1ESS costs in the BSE rates.

¹⁴ The Commission's requests for justification of the use of an embedded switch mix are, therefore, inapplicable.

projected growth in existing analog offices.¹⁵ Because this investment represents a real cost to Bell Atlantic in providing BSEs, it must be included to predict BSE costs and rates accurately.¹⁶

At the Commission's request, Bell Atlantic has recalculated illustrative BSE rates using a switch mix based on the budgeted investment in digital switches alone.¹⁷ The result shows that removal of analog switch costs would have little effect on the rates for most BSEs.¹⁸

¹⁵ Bell Atlantic plans to replace all analog switches as quickly as economically feasible, but some interim expansion of existing analog switches is needed to meet demand until new switches are installed.

¹⁶ The analog portion of the technology mix is less than 10%.

¹⁷ Bell Atlantic's filed rates for the BSEs that it can provide only through digital switches, such as Answer Supervision and Line Monitor Service, do not appear in the recalculation.

¹⁸ Some BSE rates would increase if analog switch costs were removed, because of variations in switch characteristics or hardware requirements. For example, Messaging Services Interface requires additional hardware to work through digital switches, but not through analog switches.

**Comparison of Combined Digital/Analog Monthly Rates to
Digital Only Rates**

<u>BSE</u>	<u>Current Rate</u>	<u>Digital Rate</u>	<u>Percent Difference</u>
Automatic Number Identifi- cation	\$0.0004	\$0.0003	-25.00% ¹⁹
Hunting Service Arrangements	\$0.12	\$0.12	0.00%
Hunting Service Arrangements: Circular	\$0.12	\$0.12	0.00%
Hunting Service Arrangement: Preferred	\$0.13	\$0.14	7.69%
Make Busy Arrangements	\$82.69	\$84.84	2.60%
Messaging Services Inter- face	\$550.78	\$599.51	8.85%
Non-Hunt Directory Numbers	\$0.00	\$0.00	0.00%
Three Way Call Transfer	\$7.58	\$7.22	-4.75%
Three Way Calling	\$6.75	\$6.53	-3.26%
Uniform Call Distribution	\$1.33	\$1.42	6.77%

**4. Are differences between BSE rates and unit costs
justified?**

The Commission asks Bell Atlantic to justify the
differences between the aggregate unit costs (direct cost plus

¹⁹ This high percentage reduction reflects the rounding of ANI rates to four decimal places. If non-rounded direct costs were used for the comparison, the actual reduction would be only 12%.

overhead loading) and tariffed rates for two services, Calling Billing Number Delivery and Multiline Hunt Group Individual Access to Each Port.²⁰ In developing the rate for each service, Bell Atlantic applied uniform overhead loadings to the direct costs, then set the rate at fully loaded costs. The difference between the aggregate cost and the tariffed rate is caused solely by rounding.²¹

In its initial tariff filing cost support, Bell Atlantic displayed non-rounded results on the Chart UNIT and rounded results on the Chart RATIO, as shown below. If Bell Atlantic had used the same display basis for the two charts, the ratio of rates to cost would have been unitary.

BSE	Chart UNIT	Chart RATIO
ANI	\$0.000367	\$0.0004
NHDN	0.048005	0.05

²⁰ Order at App. B. Bell Atlantic's trade names for these two services are Automatic Number Identification ("ANI") and Non-Hunt Directory Numbers ("NHDN")

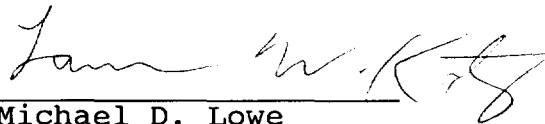
²¹ Bell Atlantic routinely sets rate elements that are charged on a per-call basis, such as ANI, at four decimal places and those charged on a per-line basis, such as NHDN, at two decimal places. The rates for these services are consistent with that practice.

Accordingly, Bell Atlantic has fully justified its ONA tariffs, and the Commission should approve them.

Respectfully submitted,

**The Bell Atlantic Telephone
Companies**

By Their Attorneys

A handwritten signature in dark ink, appearing to read "Lawrence W. Katz", is written over a horizontal line.

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May 18, 1992

CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing "Bell Atlantic's Direct Case" was served this 18th day of May, 1992, by delivery thereof by first class mail, postage prepaid, to the parties on the attached list.


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